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Mr. Gregory Rudloff
United States Environmental Protection Agency (USEPA)
Region 5
77 W. Jackson Blvd. LU-9J
Chicago, IL 60604

January 2, 2019

Subject: Eighth-Month Post Interim Measures Indoor Air Analytical Data Submittal for the Former Dow Hanging Rock Site, Ironton, OH EPA ID# OHR 000 157 727 and OHD 039 128 913

Dear Mr. Rudloff,

On behalf of The Dow Chemical Company, Jacobs is submitting the 8-month post short-term interim measures indoor air sampling analytical results at Building 505, former Dow Hanging Rock site near Ironton, Ohio.

The detections from the 8-month post indoor air samples were less than the Ohio Environmental Protection Agency response guidance accelerated response and chronic response action levels and below the USEPA indoor air regional screening levels.

The indoor air sampling was conducted on December 7, 2018, within eight months of the interim measures that were completed on April 5, 2018. Nine indoor air samples, one duplicate, and one outside/ambient air sample were collected. The canisters were shipped to Alpha Analytical located in Mansfield, Massachusetts, and analyzed for PCE, TCE, 1,1-DCE, trans-1,2-DCE, cis-1,2-DCE, and vinyl chloride by USEPA Method TO-15 SIM.

Attached are the laboratory analytical data package, the unvalidated data tabulated with previous results (Table 1), and a figure showing the data and sample locations within the building (Figure 1).

The Interim Measures Action Plan (CH2M, 2018), specified five indoor air sampling events to be conducted over 8 months, ending in December 2018, to confirm that the interim measures are working. The monitoring schedule provided for two sampling events within the first 30 days of interim measures in place (April and May) and continued monitoring during the seasonal peaks of summer (June and August) and winter (December) to monitor the effects of HVAC use and seasonal operation changes.

As stated in the Interim Measures Action Plan (CH2M, March 2018), the interim measures will be considered effective if the concentrations are detected below these screening levels. Table 1 shows that indoor air concentrations have been consistently detected below the Ohio and USEPA action levels since the interim measures were put in place; therefore, the interim measures are effective.

Since indoor air concentrations have remained below action levels, Dow recommends continued use of the air purifying units (APU), annual APU maintenance, and an annual building use evaluation to confirm building use or conditions have not changed. Annual inspections and maintenance will occur in the second quarter of the year (April, May, June).

Dow plans to evaluate potential remedial alternatives and work with USEPA to protect human health and the environment from current and future unacceptable risks.

Please contact me at (513) 673-2201 or Mr. Timothy King at (304) 747-3763 should you have any questions or comments.

Sincerely,

A handwritten signature in blue ink that reads "Marie W. Chiller".

Marie W. Chiller, Jacobs
Site Manager

Attachments

cc: Timothy King/The Dow Chemical Company

Table 1. Building 505 September 2017, April 2018, May 2018, June 2018, August 2018, and December 2018 Outdoor and Indoor Air Analytical Results^a
Vapor Intrusion Investigation Summary, Dow Hanging Rock, Ironton, Ohio

Analyte		TETRACHLOROETHYLENE (PCE)		TRICHLOROETHYLENE (TCE)		CIS-1,2-DICHLOROETHYLENE		TRANS-1,2-DICHLOROETHENE		1,1-DICHLOROETHENE	VINYL CHLORIDE
USEPA Indoor Air RSL ^b		175		9		NA		NA	876	28	
Ohio EPA Response Action Level^c		180		8.8		NA		NA	NA	28	
	Unit	ug/m ³		ug/m ³		ug/m ³		ug/m ³	ug/m ³	ug/m ³	
Sample Location		Sample ID	Date	Building 505							
Outdoor Air											
S01-HGR-OA01	S01-HGR-OA01-090817	9/8/17	0.068 J	0.107 U	0.079 U	0.079 U	0.079 U	0.079 U	0.018U		
S01-HGR-OA02	S01-HGR-OA02-041218	4/12/18	0.136 U	0.107 U	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
S01-HGR-OA03	S01-HER-OA-050418	5/4/18	0.156	0.107 U	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
S01-HGR-OA03	S01-HER-OA03-060418	6/4/18	0.136 U	0.107 U	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
S01-HGR-OA03	S01-HER-OA03-081518	8/15/18	0.136 U	0.107 U	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
S01-HGR-OA01	S01-HGR-OA01-120718	12/7/18	3.38	0.118	0.079 U	0.151	0.079 U	0.079 U	0.051 U		
Indoor Air											
IA06	S01-B505-IA06-090817	9/8/17	326	1.04	0.079	0.024 J	0.079 U	0.079 U	0.018U		
	S01-B505-IA06-041218	4/12/18	30.2	0.559	0.17	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA06-050418	5/4/18	11.7	0.242	0.079	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA06-060418	6/4/18	5.51	0.183	0.099	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA06-081518	8/15/18	1.99	0.124	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA06-120718	12/7/18	0.163	0.107 U	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
IA07	S01-B505-IA07-090817	9/8/17	220	0.451	0.06 J	0.024 J	0.079 U	0.079 U	0.018U		
	S01-B505-IA07-041218	4/12/18	15.9	0.597	0.111	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA07-050418	5/4/18	12.6	0.408	0.083	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA07-060418	6/4/18	1.85	0.107 U	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA07-081518	8/15/18	1.55	0.150	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA07-120718	12/7/18	5.35	0.145	0.143	0.135	0.079 U	0.079 U	0.051 U		
IA08	S01-B505-IA08-090817	9/8/17	197	0.403	0.052 J	0.079 U	0.079 U	0.079 U	0.018U		
	S01-B505-IA08-050418	5/4/18	6.64	0.220	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA08-060418	6/4/18	1.72	0.107 U	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA08-081518	8/15/18	2.21	0.204	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA08-120718	12/7/18	2.86	0.145	0.079 U	0.186	0.079 U	0.079 U	0.051 U		
IA09	S01-B505-IA09-090817	9/8/17	268	0.543	0.067 J	0.028 J	0.079 U	0.079 U	0.018U		
	S01-HGR-090817-FD02	9/8/17	262	0.527	0.071 J	0.079 U	0.079 U	0.079 U	0.018U		
	S01-B505-IA09-041218	4/12/18	17.4	0.532	0.159	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA09-050418	5/4/18	7.46	0.247	0.079	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-FD01-050418	5/4/18	8.41	0.290	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA09-060418	6/4/18	1.97	0.107 U	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA09-050420	6/4/18	3.39	0.140	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA09-081518	8/15/18	1.67	0.129	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA09-120718	12/7/18	2.93	0.129	0.079 U	0.186	0.079 U	0.079 U	0.051 U		
	S01-B505-FD01-120718	12/7/18	3.33	0.113	0.079 U	0.163	0.079 U	0.079 U	0.051 U		
IA10	S01-B505-IA10-090817	9/8/17	324	1.00	0.099	0.024 J	0.079 U	0.079 U	0.018U		
	S01-B505-IA10-041218	4/12/18	45.5	0.736	0.297	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA10-050418	5/4/18	14.6	0.575	0.103	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA10-060418	6/4/18	3.42	0.145	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA10-081518	8/15/18	1.79	0.145	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA10-120718	12/7/18	5.61	0.204	0.194	0.099	0.079 U	0.079 U	0.051 U		
IA11	S01-B505-IA11-041218	4/12/18	30.6	0.376	0.297	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA11-050418	5/4/18	9.56	0.220	0.095	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA11-060418	6/4/18	3.40	0.118	0.083	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA11-081518	8/15/18	1.59	0.107 U	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-FD01-081518	8/15/18	1.64	0.107 U	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA11-120718	12/7/18	6.32	0.156	0.095	0.131	0.079 U	0.079 U	0.051 U		
IA12	S01-B505-IA12-041218	4/12/18	3.27	0.161	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA12-041218-FD01	4/12/18	3.36	0.167	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA12-050418	5/4/18	1.58	0.107 U	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA12-060418	6/4/18	1.11	0.107 U	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA12-081518	8/15/18	1.08	0.193	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA12-120718	12/7/18	3.01	0.150	0.079 U	0.155	0.079 U	0.079 U	0.051 U		
IA13	S01-B505-IA13-050418	5/4/18	19.0	0.177	0.079 U	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA13-060418	6/4/18	15.2	0.333	0.309	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA13-081518	8/15/18	12	0.242	0.091	0.131	0.079 U	0.079 U	0.051 U		
	S01-B505-IA13-120718	12/7/18	19.7	0.430	0.436	0.274	0.079 U	0.079 U	0.051 U		
IA14	S01-B505-IA14-050418	5/4/18	8.21	0.193	0.230	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA14-060418	6/4/18	20.8	0.548	1.05	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA14-081518	8/15/18	7.66	0.263	0.333	0.079 U	0.079 U	0.079 U	0.051 U		
	S01-B505-IA14-120718	12/7/18	4.35	0.118	0.083	0.151	0.079 U	0.079 U	0.051 U		

Notes:

^a: The December 2018 data are preliminary. This data has not yet been validated.

^b: RSL is a risk-based screening level derived from the lowest of the cancer-based ($TCR = 1 \times 10^{-5}$) or the noncancer-based ($THQ = 1$) industrial indoor air Regional Screening Levels (RSLs) [EPA, 2018], which ever is

^c: Ohio EPA response guidance provides an Accelerated Response Action Level for trichloroethylene (TCE) based on a THQ=1 and Chronic Response Action Levels for tetrachloroethylene (PCE) and vinyl chloride (based on a THQ=1 or $TCR=1 \times 10^{-5}$). Source - Ohio EPA Guidance Document Recommendations Regarding Response Action Levels and Timeframes for Common Contaminants of Concern at Vapor Intrusion Sites in Ohio (Ohio EPA, August 2016).

Bold text indicates a detection

Shading indicates a VISL exceedance

= - detected result

$\mu\text{g}/\text{m}^3$ - micrograms per cubic meter

J - estimated result

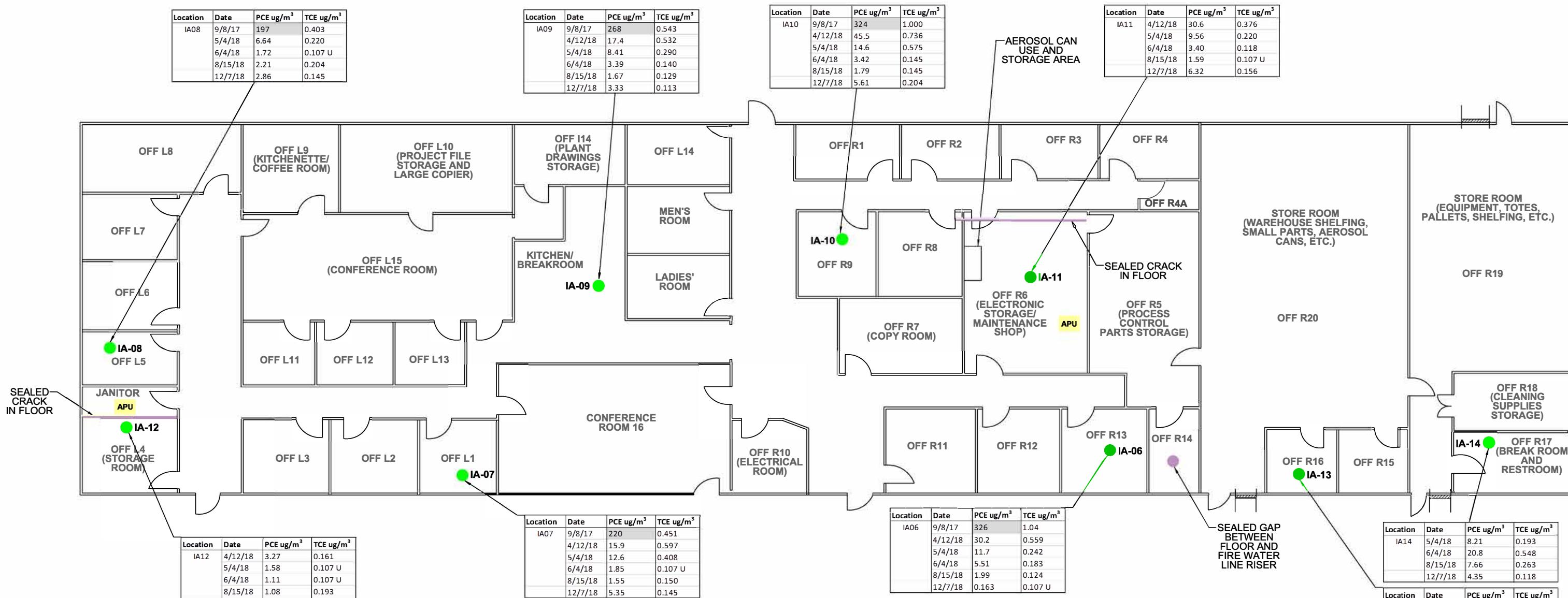
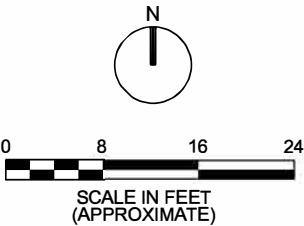
N/A - not applicable

TCR - target risk for carcinogens

THQ - target hazard quotient for non-carcinogens

U - not detected, reporting limit shown

VISL = vapor intrusion screening level



Legend

■ APU AIR PURIFYING UNIT

● INDOOR AIR SAMPLE

— GARAGE DOOR

Notes:

µg/m³ = MICROGRAMS PER CUBIC METER

SHADED DATA EXCEEDS THE SCREENING LEVEL

U = NOT DETECTED

Figure 1
Building 505 Layout and PCE and TCE Indoor Sampling Air Results
Hanging Rock Facility
Ironton, OH

JACOBS



ANALYTICAL REPORT

Lab Number:	L1851508
Client:	Jacobs 1880 Way Cross Road Cincinnati, OH 45420
ATTN:	Marie Chiller
Phone:	(513) 673-2201
Project Name:	DOW HANGING ROCK
Project Number:	693874.CI.FD
Report Date:	12/20/18

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA030), NH NELAP (2062), CT (PH-0141), DoD (L2474), FL (E87814), IL (200081), LA (85084), ME (MA00030), MD (350), NJ (MA015), NY (11627), NC (685), OH (CL106), PA (68-02089), RI (LAO00299), TX (T104704419), VT (VT-0015), VA (460194), WA (C954), US Army Corps of Engineers, USDA (Permit #P330-17-00150), USFWS (Permit #206964).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: DOW HANGING ROCK
Project Number: 693874.CI.FD

Lab Number: L1851508
Report Date: 12/20/18

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1851508-01	S01-B505-IA13-120718	AIR	IRONTON, OH	12/07/18 17:39	12/13/18
L1851508-02	S01-B505-IA11-120718	AIR	IRONTON, OH	12/07/18 17:43	12/13/18
L1851508-03	S01-B505-IA12-120718	AIR	IRONTON, OH	12/07/18 17:51	12/13/18
L1851508-04	S01-B505-IA08-120718	AIR	IRONTON, OH	12/07/18 17:53	12/13/18
L1851508-05	S01-B505-IA09-120718	AIR	IRONTON, OH	12/07/18 17:56	12/13/18
L1851508-06	S01-B505-FD01-120718	AIR	IRONTON, OH	12/07/18 18:11	12/13/18
L1851508-07	S01-B505-OA01-120718	AIR	IRONTON, OH	12/07/18 18:00	12/13/18
L1851508-08	S01-B505-IA06-120718	AIR	IRONTON, OH	12/07/18 18:23	12/13/18
L1851508-09	S01-B505-IA14-120718	AIR	IRONTON, OH	12/07/18 18:39	12/13/18
L1851508-10	S01-B505-IA10-120718	AIR	IRONTON, OH	12/07/18 17:45	12/13/18
L1851508-11	S01-B505-IA7-120718	AIR	IRONTON, OH	12/07/18 17:49	12/13/18
L1851508-12	UNUSED 2521	AIR	IRONTON, OH		12/13/18

Project Name: DOW HANGING ROCK
Project Number: 693874.CI.FD

Lab Number: L1851508
Report Date: 12/20/18

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively. When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. All specific QC information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications. Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances the specific failure is not narrated but noted in the associated QC table. The information is also incorporated in the Data Usability format of our Data Merger tool where it can be reviewed along with any associated usability implications.

Please see the associated ADEx data file for a comparison of laboratory reporting limits that were achieved with the regulatory Numerical Standards requested on the Chain of Custody.

HOLD POLICY

For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Client Service Representative and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Client Services at 800-624-9220 with any questions.

Project Name: DOW HANGING ROCK
Project Number: 693874.CI.FD

Lab Number: L1851508
Report Date: 12/20/18

Case Narrative (continued)

Volatile Organics in Air

Canisters were released from the laboratory on December 5, 2018. The canister certification results are provided as an addendum.

Sample Receipt

The flow controller used for the sample designated S01-B505-IA12-120718 (L1851508-03) was not returned with the samples.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature:

 Andy Rezendes

Title: Technical Director/Representative

Date: 12/20/18

AIR



Project Name: DOW HANGING ROCK
Project Number: 693874.CI.FD

Lab Number: L1851508
Report Date: 12/20/18

SAMPLE RESULTS

Lab ID:	L1851508-01	Date Collected:	12/07/18 17:39
Client ID:	S01-B505-IA13-120718	Date Received:	12/13/18
Sample Location:	IRONTON, OH	Field Prep:	Not Specified

Sample Depth:

Matrix: Air
Analytical Method: 48,TO-15-SIM
Analytical Date: 12/19/18 17:07
Analyst: EW

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
trans-1,2-Dichloroethene	0.069	0.020	--	0.274	0.079	--		1
cis-1,2-Dichloroethene	0.110	0.020	--	0.436	0.079	--		1
Trichloroethene	0.080	0.020	--	0.430	0.107	--		1
Tetrachloroethene	2.90	0.020	--	19.7	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	80		60-140
bromochloromethane	79		60-140
chlorobenzene-d5	80		60-140

Project Name: DOW HANGING ROCK
Project Number: 693874.CI.FD

Lab Number: L1851508
Report Date: 12/20/18

SAMPLE RESULTS

Lab ID:	L1851508-02	Date Collected:	12/07/18 17:43
Client ID:	S01-B505-IA11-120718	Date Received:	12/13/18
Sample Location:	IRONTON, OH	Field Prep:	Not Specified

Sample Depth:

Matrix: Air
Analytical Method: 48,TO-15-SIM
Analytical Date: 12/19/18 18:26
Analyst: EW

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
trans-1,2-Dichloroethene	0.033	0.020	--	0.131	0.079	--		1
cis-1,2-Dichloroethene	0.024	0.020	--	0.095	0.079	--		1
Trichloroethene	0.029	0.020	--	0.156	0.107	--		1
Tetrachloroethene	0.932	0.020	--	6.32	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	92		60-140
bromochloromethane	92		60-140
chlorobenzene-d5	91		60-140

Project Name: DOW HANGING ROCK
Project Number: 693874.CI.FD

Lab Number: L1851508
Report Date: 12/20/18

SAMPLE RESULTS

Lab ID:	L1851508-03	Date Collected:	12/07/18 17:51
Client ID:	S01-B505-IA12-120718	Date Received:	12/13/18
Sample Location:	IRONTON, OH	Field Prep:	Not Specified

Sample Depth:

Matrix: Air
Analytical Method: 48,TO-15-SIM
Analytical Date: 12/19/18 19:06
Analyst: EW

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
trans-1,2-Dichloroethene	0.039	0.020	--	0.155	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Trichloroethene	0.028	0.020	--	0.150	0.107	--		1
Tetrachloroethene	0.444	0.020	--	3.01	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	77		60-140
bromochloromethane	77		60-140
chlorobenzene-d5	77		60-140

Project Name: DOW HANGING ROCK
Project Number: 693874.CI.FD

Lab Number: L1851508
Report Date: 12/20/18

SAMPLE RESULTS

Lab ID:	L1851508-04	Date Collected:	12/07/18 17:53
Client ID:	S01-B505-IA08-120718	Date Received:	12/13/18
Sample Location:	IRONTON, OH	Field Prep:	Not Specified

Sample Depth:

Matrix: Air
Analytical Method: 48,TO-15-SIM
Analytical Date: 12/19/18 19:46
Analyst: EW

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
trans-1,2-Dichloroethene	0.047	0.020	--	0.186	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Trichloroethene	0.027	0.020	--	0.145	0.107	--		1
Tetrachloroethene	0.422	0.020	--	2.86	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	85		60-140
bromochloromethane	85		60-140
chlorobenzene-d5	85		60-140

Project Name: DOW HANGING ROCK
Project Number: 693874.CI.FD

Lab Number: L1851508
Report Date: 12/20/18

SAMPLE RESULTS

Lab ID:	L1851508-05	Date Collected:	12/07/18 17:56
Client ID:	S01-B505-IA09-120718	Date Received:	12/13/18
Sample Location:	IRONTON, OH	Field Prep:	Not Specified

Sample Depth:

Matrix: Air
Analytical Method: 48,TO-15-SIM
Analytical Date: 12/19/18 20:25
Analyst: EW

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
trans-1,2-Dichloroethene	0.047	0.020	--	0.186	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Trichloroethene	0.024	0.020	--	0.129	0.107	--		1
Tetrachloroethene	0.432	0.020	--	2.93	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	87		60-140
bromochloromethane	88		60-140
chlorobenzene-d5	88		60-140

Project Name: DOW HANGING ROCK
Project Number: 693874.CI.FD

Lab Number: L1851508
Report Date: 12/20/18

SAMPLE RESULTS

Lab ID:	L1851508-06	Date Collected:	12/07/18 18:11
Client ID:	S01-B505-FD01-120718	Date Received:	12/13/18
Sample Location:	IRONTON, OH	Field Prep:	Not Specified

Sample Depth:

Matrix: Air
Analytical Method: 48,TO-15-SIM
Analytical Date: 12/19/18 21:05
Analyst: EW

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
trans-1,2-Dichloroethene	0.041	0.020	--	0.163	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Trichloroethene	0.021	0.020	--	0.113	0.107	--		1
Tetrachloroethene	0.491	0.020	--	3.33	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	91		60-140
bromochloromethane	92		60-140
chlorobenzene-d5	90		60-140

Project Name: DOW HANGING ROCK
Project Number: 693874.CI.FD

Lab Number: L1851508
Report Date: 12/20/18

SAMPLE RESULTS

Lab ID:	L1851508-07	Date Collected:	12/07/18 18:00
Client ID:	S01-B505-OA01-120718	Date Received:	12/13/18
Sample Location:	IRONTON, OH	Field Prep:	Not Specified

Sample Depth:

Matrix: Air
Analytical Method: 48,TO-15-SIM
Analytical Date: 12/19/18 16:28
Analyst: EW

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
trans-1,2-Dichloroethene	0.038	0.020	--	0.151	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Trichloroethene	0.022	0.020	--	0.118	0.107	--		1
Tetrachloroethene	0.499	0.020	--	3.38	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	96		60-140
bromochloromethane	98		60-140
chlorobenzene-d5	96		60-140

Project Name: DOW HANGING ROCK
Project Number: 693874.CI.FD

Lab Number: L1851508
Report Date: 12/20/18

SAMPLE RESULTS

Lab ID:	L1851508-08	Date Collected:	12/07/18 18:23
Client ID:	S01-B505-IA06-120718	Date Received:	12/13/18
Sample Location:	IRONTON, OH	Field Prep:	Not Specified

Sample Depth:

Matrix: Air
Analytical Method: 48,TO-15-SIM
Analytical Date: 12/19/18 21:44
Analyst: EW

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
Tetrachloroethene	0.024	0.020	--	0.163	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	91		60-140
bromochloromethane	93		60-140
chlorobenzene-d5	91		60-140

Project Name: DOW HANGING ROCK
Project Number: 693874.CI.FD

Lab Number: L1851508
Report Date: 12/20/18

SAMPLE RESULTS

Lab ID:	L1851508-09	Date Collected:	12/07/18 18:39
Client ID:	S01-B505-IA14-120718	Date Received:	12/13/18
Sample Location:	IRONTON, OH	Field Prep:	Not Specified

Sample Depth:

Matrix: Air
Analytical Method: 48,TO-15-SIM
Analytical Date: 12/19/18 22:24
Analyst: EW

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
trans-1,2-Dichloroethene	0.038	0.020	--	0.151	0.079	--		1
cis-1,2-Dichloroethene	0.021	0.020	--	0.083	0.079	--		1
Trichloroethene	0.022	0.020	--	0.118	0.107	--		1
Tetrachloroethene	0.642	0.020	--	4.35	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	90		60-140
bromochloromethane	92		60-140
chlorobenzene-d5	92		60-140

Project Name: DOW HANGING ROCK
Project Number: 693874.CI.FD

Lab Number: L1851508
Report Date: 12/20/18

SAMPLE RESULTS

Lab ID:	L1851508-10	Date Collected:	12/07/18 17:45
Client ID:	S01-B505-IA10-120718	Date Received:	12/13/18
Sample Location:	IRONTON, OH	Field Prep:	Not Specified

Sample Depth:

Matrix: Air
Analytical Method: 48,TO-15-SIM
Analytical Date: 12/19/18 23:05
Analyst: EW

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
trans-1,2-Dichloroethene	0.025	0.020	--	0.099	0.079	--		1
cis-1,2-Dichloroethene	0.049	0.020	--	0.194	0.079	--		1
Trichloroethene	0.038	0.020	--	0.204	0.107	--		1
Tetrachloroethene	0.828	0.020	--	5.61	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	90		60-140
bromochloromethane	91		60-140
chlorobenzene-d5	91		60-140

Project Name: DOW HANGING ROCK
Project Number: 693874.CI.FD

Lab Number: L1851508
Report Date: 12/20/18

SAMPLE RESULTS

Lab ID:	L1851508-11	Date Collected:	12/07/18 17:49
Client ID:	S01-B505-IA7-120718	Date Received:	12/13/18
Sample Location:	IRONTON, OH	Field Prep:	Not Specified

Sample Depth:

Matrix: Air
Analytical Method: 48,TO-15-SIM
Analytical Date: 12/19/18 23:44
Analyst: EW

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
trans-1,2-Dichloroethene	0.034	0.020	--	0.135	0.079	--		1
cis-1,2-Dichloroethene	0.036	0.020	--	0.143	0.079	--		1
Trichloroethene	0.027	0.020	--	0.145	0.107	--		1
Tetrachloroethene	0.789	0.020	--	5.35	0.136	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	93		60-140
bromochloromethane	94		60-140
chlorobenzene-d5	93		60-140

Project Name: DOW HANGING ROCK
Project Number: 693874.CI.FD

Lab Number: L1851508
Report Date: 12/20/18

Method Blank Analysis Batch Quality Control

Analytical Method: 48,TO-15-SIM
Analytical Date: 12/19/18 15:10

Parameter	ppbV			ug/m3			Qualifier	Dilution Factor
	Results	RL	MDL	Results	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01-11 Batch: WG1191212-4								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1



Lab Control Sample Analysis

Batch Quality Control

Project Name: DOW HANGING ROCK
Project Number: 693874.CI.FD

Lab Number: L1851508
Report Date: 12/20/18

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-11 Batch: WG1191212-3								
Vinyl chloride	135	Q	-	-	70-130	-	-	25
1,1-Dichloroethene	130		-	-	70-130	-	-	25
trans-1,2-Dichloroethene	128		-	-	70-130	-	-	25
cis-1,2-Dichloroethene	127		-	-	70-130	-	-	25
Trichloroethene	102		-	-	70-130	-	-	25
Tetrachloroethene	88		-	-	70-130	-	-	25

Lab Duplicate Analysis
Batch Quality Control

Project Name: DOW HANGING ROCK
Project Number: 693874.CI.FD

Lab Number: L1851508
Report Date: 12/20/18

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01-11 QC Batch ID: WG1191212-5 QC Sample: L1851508-01 Client ID: S01-B505-IA13-120718						
Vinyl chloride	ND	ND	ppbV	NC		25
1,1-Dichloroethene	ND	ND	ppbV	NC		25
trans-1,2-Dichloroethene	0.069	0.069	ppbV	0		25
cis-1,2-Dichloroethene	0.110	0.101	ppbV	9		25
Trichloroethene	0.080	0.078	ppbV	3		25
Tetrachloroethene	2.90	2.88	ppbV	1		25

Project Name: DOW HANGING ROCK

Serial_No:12201814:09

Project Number: 693874.CI.FD

Lab Number: L1851508

Report Date: 12/20/18

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controller Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1851508-01	S01-B505-IA13-120718	0973	Flow 4	12/05/18	279924		-	-	-	Pass	10.0	14.9	39
L1851508-01	S01-B505-IA13-120718	982	6.0L Can	12/05/18	279924	L1849184-13	Pass	-29.4	-0.0	-	-	-	-
L1851508-02	S01-B505-IA11-120718	01033	Flow 4	12/05/18	279924		-	-	-	Pass	10.0	9.7	3
L1851508-02	S01-B505-IA11-120718	1825	6.0L Can	12/05/18	279924	L1849184-11	Pass	-29.4	-5.3	-	-	-	-
L1851508-03	S01-B505-IA12-120718	1706	6.0L Can	12/05/18	279924	L1849184-07	Pass	-29.4	-4.6	-	-	-	-
L1851508-04	S01-B505-IA08-120718	0169	Flow 4	12/05/18	279924		-	-	-	Pass	10.0	9.3	7
L1851508-04	S01-B505-IA08-120718	2053	6.0L Can	12/05/18	279924	L1849184-09	Pass	-29.4	-5.6	-	-	-	-
L1851508-05	S01-B505-IA09-120718	0625	Flow 3	12/05/18	279924		-	-	-	Pass	10.0	9.7	3
L1851508-05	S01-B505-IA09-120718	1980	6.0L Can	12/05/18	279924	L1849184-06	Pass	-29.4	-7.8	-	-	-	-
L1851508-06	S01-B505-FD01-120718	0624	Flow 4	12/05/18	279924		-	-	-	Pass	10.0	10.8	8
L1851508-06	S01-B505-FD01-120718	2120	6.0L Can	12/05/18	279924	L1849184-10	Pass	-29.4	-3.9	-	-	-	-
L1851508-07	S01-B505-OA01-120718	0386	Flow 3	12/05/18	279924		-	-	-	Pass	10.0	9.4	6
L1851508-07	S01-B505-OA01-120718	1515	6.0L Can	12/05/18	279924	L1849184-01	Pass	-29.6	-5.6	-	-	-	-
L1851508-08	S01-B505-IA06-120718	0235	Flow 5	12/05/18	279924		-	-	-	Pass	10.0	9.3	7
L1851508-08	S01-B505-IA06-120718	2569	6.0L Can	12/05/18	279924	L1849184-12	Pass	-29.4	-2.6	-	-	-	-

Project Name: DOW HANGING ROCK

Serial_No:12201814:09

Project Number: 693874.CI.FD

Lab Number: L1851508

Report Date: 12/20/18

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controller Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1851508-09	S01-B505-IA14-120718	0454	Flow 3	12/05/18	279924		-	-	-	Pass	10.0	9.9	1
L1851508-09	S01-B505-IA14-120718	1551	6.0L Can	12/05/18	279924	L1849184-05	Pass	-29.6	-8.2	-	-	-	-
L1851508-10	S01-B505-IA10-120718	01168	Flow 3	12/05/18	279924		-	-	-	Pass	10.0	9.8	2
L1851508-10	S01-B505-IA10-120718	899	6.0L Can	12/05/18	279924	L1849184-02	Pass	-29.6	-9.3	-	-	-	-
L1851508-11	S01-B505-IA7-120718	0593	Flow 3	12/05/18	279924		-	-	-	Pass	10.0	10.1	1
L1851508-11	S01-B505-IA7-120718	2126	6.0L Can	12/05/18	279924	L1849184-08	Pass	-29.5	-6.3	-	-	-	-
L1851508-12	UNUSED 2521	0971	Flow 3	12/05/18	279924		-	-	-	Pass	10.0	10.0	0
L1851508-12	UNUSED 2521	1527	6.0L Can	12/05/18	279924	L1849184-03	Pass	-29.4	-29.4	-	-	-	-

Project Name: INDIV. CANISTER CERTIFICATION

Lab Number: L1849184

Project Number: CANISTER QC INDIV

Report Date: 12/20/18

Air Canister Certification Results

Lab ID:	L1849184-01	Date Collected:	11/30/18 16:00
Client ID:	CAN 1515 FC 0386	Date Received:	12/03/18
Sample Location:		Field Prep:	Not Specified

Sample Depth:

Matrix: Air
 Analytical Method: 48,TO-15-SIM
 Analytical Date: 12/03/18 15:01
 Analyst: MB

Parameter	Results	ppbV		ug/m3		Qualifier	Dilution Factor
		RL	MDL	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab							
Vinyl chloride	ND	0.020	--	ND	0.051	--	1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--	1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--	1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	1
Trichloroethene	ND	0.020	--	ND	0.107	--	1
Tetrachloroethene	ND	0.020	--	ND	0.136	--	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	86		60-140
bromochloromethane	90		60-140
chlorobenzene-d5	86		60-140

Project Name: INDIV. CANISTER CERTIFICATION

Lab Number: L1849184

Project Number: CANISTER QC INDIV

Report Date: 12/20/18

Air Canister Certification Results

Lab ID:	L1849184-02	Date Collected:	11/30/18 16:00
Client ID:	CAN 899 FC 01168	Date Received:	12/03/18
Sample Location:		Field Prep:	Not Specified

Sample Depth:

Matrix: Air
 Analytical Method: 48,TO-15-SIM
 Analytical Date: 12/03/18 15:34
 Analyst: MB

Parameter	Results	ppbV		ug/m3		Qualifier	Dilution Factor
		RL	MDL	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab							
Vinyl chloride	ND	0.020	--	ND	0.051	--	1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--	1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--	1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	1
Trichloroethene	ND	0.020	--	ND	0.107	--	1
Tetrachloroethene	ND	0.020	--	ND	0.136	--	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	83		60-140
bromochloromethane	87		60-140
chlorobenzene-d5	84		60-140

Project Name: INDIV. CANISTER CERTIFICATION

Lab Number: L1849184

Project Number: CANISTER QC INDIV

Report Date: 12/20/18

Air Canister Certification Results

Lab ID:	L1849184-03	Date Collected:	11/30/18 16:00
Client ID:	CAN 1527 FC 0137	Date Received:	12/03/18
Sample Location:		Field Prep:	Not Specified

Sample Depth:

Matrix: Air
 Analytical Method: 48,TO-15-SIM
 Analytical Date: 12/03/18 16:05
 Analyst: MB

Parameter	Results	ppbV		ug/m3		Qualifier	Dilution Factor
		RL	MDL	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab							
Vinyl chloride	ND	0.020	--	ND	0.051	--	1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--	1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--	1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	1
Trichloroethene	ND	0.020	--	ND	0.107	--	1
Tetrachloroethene	ND	0.020	--	ND	0.136	--	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	81		60-140
bromochloromethane	86		60-140
chlorobenzene-d5	82		60-140

Project Name: INDIV. CANISTER CERTIFICATION

Lab Number: L1849184

Project Number: CANISTER QC INDIV

Report Date: 12/20/18

Air Canister Certification Results

Lab ID:	L1849184-05	Date Collected:	11/30/18 16:00
Client ID:	CAN 1551 FC 0454	Date Received:	12/03/18
Sample Location:		Field Prep:	Not Specified

Sample Depth:

Matrix: Air
 Analytical Method: 48,TO-15-SIM
 Analytical Date: 12/03/18 17:09
 Analyst: MB

Parameter	Results	ppbV		ug/m3		Qualifier	Dilution Factor
		RL	MDL	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab							
Vinyl chloride	ND	0.020	--	ND	0.051	--	1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--	1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--	1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	1
Trichloroethene	ND	0.020	--	ND	0.107	--	1
Tetrachloroethene	ND	0.020	--	ND	0.136	--	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	78		60-140
bromochloromethane	85		60-140
chlorobenzene-d5	80		60-140

Project Name: INDIV. CANISTER CERTIFICATION

Lab Number: L1849184

Project Number: CANISTER QC INDIV

Report Date: 12/20/18

Air Canister Certification Results

Lab ID:	L1849184-06	Date Collected:	11/30/18 16:00
Client ID:	CAN 1980 FC 0625	Date Received:	12/03/18
Sample Location:		Field Prep:	Not Specified

Sample Depth:

Matrix: Air
 Analytical Method: 48,TO-15-SIM
 Analytical Date: 12/03/18 17:41
 Analyst: MB

Parameter	Results	ppbV		ug/m3		Qualifier	Dilution Factor
		RL	MDL	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab							
Vinyl chloride	ND	0.020	--	ND	0.051	--	1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--	1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--	1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	1
Trichloroethene	ND	0.020	--	ND	0.107	--	1
Tetrachloroethene	ND	0.020	--	ND	0.136	--	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	77		60-140
bromochloromethane	83		60-140
chlorobenzene-d5	78		60-140

Project Name: INDIV. CANISTER CERTIFICATION

Lab Number: L1849184

Project Number: CANISTER QC INDIV

Report Date: 12/20/18

Air Canister Certification Results

Lab ID:	L1849184-07	Date Collected:	11/30/18 16:00
Client ID:	CAN 1706 FC 0971	Date Received:	12/03/18
Sample Location:		Field Prep:	Not Specified

Sample Depth:

Matrix: Air
 Analytical Method: 48,TO-15-SIM
 Analytical Date: 12/03/18 18:13
 Analyst: MB

Parameter	Results	ppbV		ug/m3		Qualifier	Dilution Factor
		RL	MDL	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab							
Vinyl chloride	ND	0.020	--	ND	0.051	--	1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--	1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--	1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	1
Trichloroethene	ND	0.020	--	ND	0.107	--	1
Tetrachloroethene	ND	0.020	--	ND	0.136	--	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	77		60-140
bromochloromethane	83		60-140
chlorobenzene-d5	79		60-140

Project Name: INDIV. CANISTER CERTIFICATION

Lab Number: L1849184

Project Number: CANISTER QC INDIV

Report Date: 12/20/18

Air Canister Certification Results

Lab ID:	L1849184-08	Date Collected:	11/30/18 16:00
Client ID:	CAN 2126 FC 0593	Date Received:	12/03/18
Sample Location:		Field Prep:	Not Specified

Sample Depth:

Matrix: Air
 Analytical Method: 48,TO-15-SIM
 Analytical Date: 12/03/18 18:45
 Analyst: MB

Parameter	Results	ppbV		ug/m3		Qualifier	Dilution Factor
		RL	MDL	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab							
Vinyl chloride	ND	0.020	--	ND	0.051	--	1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--	1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--	1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	1
Trichloroethene	ND	0.020	--	ND	0.107	--	1
Tetrachloroethene	ND	0.020	--	ND	0.136	--	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	76		60-140
bromochloromethane	82		60-140
chlorobenzene-d5	78		60-140

Project Name: INDIV. CANISTER CERTIFICATION

Lab Number: L1849184

Project Number: CANISTER QC INDIV

Report Date: 12/20/18

Air Canister Certification Results

Lab ID:	L1849184-09	Date Collected:	11/30/18 16:00
Client ID:	CAN 2053 FC 0169	Date Received:	12/03/18
Sample Location:		Field Prep:	Not Specified

Sample Depth:

Matrix: Air
 Analytical Method: 48,TO-15-SIM
 Analytical Date: 12/03/18 19:17
 Analyst: MB

Parameter	Results	ppbV		ug/m3		Qualifier	Dilution Factor
		RL	MDL	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab							
Vinyl chloride	ND	0.020	--	ND	0.051	--	1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--	1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--	1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	1
Trichloroethene	ND	0.020	--	ND	0.107	--	1
Tetrachloroethene	ND	0.020	--	ND	0.136	--	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	74		60-140
bromochloromethane	81		60-140
chlorobenzene-d5	77		60-140

Project Name: INDIV. CANISTER CERTIFICATION

Lab Number: L1849184

Project Number: CANISTER QC INDIV

Report Date: 12/20/18

Air Canister Certification Results

Lab ID:	L1849184-10	Date Collected:	11/30/18 16:00
Client ID:	CAN 2120 FC 0624	Date Received:	12/03/18
Sample Location:		Field Prep:	Not Specified

Sample Depth:

Matrix: Air
 Analytical Method: 48,TO-15-SIM
 Analytical Date: 12/03/18 19:49
 Analyst: MB

Parameter	Results	ppbV		ug/m3		Qualifier	Dilution Factor
		RL	MDL	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab							
Vinyl chloride	ND	0.020	--	ND	0.051	--	1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--	1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--	1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	1
Trichloroethene	ND	0.020	--	ND	0.107	--	1
Tetrachloroethene	ND	0.020	--	ND	0.136	--	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	73		60-140
bromochloromethane	80		60-140
chlorobenzene-d5	75		60-140

Project Name: INDIV. CANISTER CERTIFICATION

Lab Number: L1849184

Project Number: CANISTER QC INDIV

Report Date: 12/20/18

Air Canister Certification Results

Lab ID:	L1849184-11	Date Collected:	11/30/18 16:00
Client ID:	CAN 1825 FC 01033	Date Received:	12/03/18
Sample Location:		Field Prep:	Not Specified

Sample Depth:

Matrix: Air
 Analytical Method: 48,TO-15-SIM
 Analytical Date: 12/03/18 20:20
 Analyst: MB

Parameter	Results	ppbV		ug/m3		Qualifier	Dilution Factor
		RL	MDL	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab							
Vinyl chloride	ND	0.020	--	ND	0.051	--	1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--	1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--	1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	1
Trichloroethene	ND	0.020	--	ND	0.107	--	1
Tetrachloroethene	ND	0.020	--	ND	0.136	--	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	74		60-140
bromochloromethane	81		60-140
chlorobenzene-d5	77		60-140

Project Name: INDIV. CANISTER CERTIFICATION

Lab Number: L1849184

Project Number: CANISTER QC INDIV

Report Date: 12/20/18

Air Canister Certification Results

Lab ID:	L1849184-12	Date Collected:	11/30/18 16:00
Client ID:	CAN 2569 FC 0235	Date Received:	12/03/18
Sample Location:		Field Prep:	Not Specified

Sample Depth:

Matrix: Air
 Analytical Method: 48,TO-15-SIM
 Analytical Date: 12/03/18 20:52
 Analyst: MB

Parameter	Results	ppbV		ug/m3		Qualifier	Dilution Factor
		RL	MDL	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab							
Vinyl chloride	ND	0.020	--	ND	0.051	--	1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--	1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--	1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	1
Trichloroethene	ND	0.020	--	ND	0.107	--	1
Tetrachloroethene	ND	0.020	--	ND	0.136	--	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	74		60-140
bromochloromethane	81		60-140
chlorobenzene-d5	76		60-140

Project Name: INDIV. CANISTER CERTIFICATION

Lab Number: L1849184

Project Number: CANISTER QC INDIV

Report Date: 12/20/18

Air Canister Certification Results

Lab ID:	L1849184-13	Date Collected:	11/30/18 16:00
Client ID:	CAN 982 FC 0973	Date Received:	12/03/18
Sample Location:		Field Prep:	Not Specified

Sample Depth:

Matrix: Air
 Analytical Method: 48,TO-15-SIM
 Analytical Date: 12/03/18 21:24
 Analyst: MB

Parameter	Results	ppbV		ug/m3		Qualifier	Dilution Factor
		RL	MDL	RL	MDL		
Volatile Organics in Air by SIM - Mansfield Lab							
Vinyl chloride	ND	0.020	--	ND	0.051	--	1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--	1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--	1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--	1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--	1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--	1
Trichloroethene	ND	0.020	--	ND	0.107	--	1
Tetrachloroethene	ND	0.020	--	ND	0.136	--	1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	73		60-140
bromochloromethane	81		60-140
chlorobenzene-d5	76		60-140

Project Name: DOW HANGING ROCK
Project Number: 693874.CI.FD

Serial_No:12201814:09
Lab Number: L1851508
Report Date: 12/20/18

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
N/A	Present/Intact

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1851508-01A	Canister - 6 Liter	N/A	NA			Y	Present/Intact		TO15-SIM(30)
L1851508-02A	Canister - 6 Liter	N/A	NA			Y	Present/Intact		TO15-SIM(30)
L1851508-03A	Canister - 6 Liter	N/A	NA			Y	Present/Intact		TO15-SIM(30)
L1851508-04A	Canister - 6 Liter	N/A	NA			Y	Present/Intact		TO15-SIM(30)
L1851508-05A	Canister - 6 Liter	N/A	NA			Y	Present/Intact		TO15-SIM(30)
L1851508-06A	Canister - 6 Liter	N/A	NA			Y	Present/Intact		TO15-SIM(30)
L1851508-07A	Canister - 6 Liter	N/A	NA			Y	Present/Intact		TO15-SIM(30)
L1851508-08A	Canister - 6 Liter	N/A	NA			Y	Present/Intact		TO15-SIM(30)
L1851508-09A	Canister - 6 Liter	N/A	NA			Y	Present/Intact		TO15-SIM(30)
L1851508-10A	Canister - 6 Liter	N/A	NA			Y	Present/Intact		TO15-SIM(30)
L1851508-11A	Canister - 6 Liter	N/A	NA			Y	Present/Intact		TO15-SIM(30)
L1851508-12A	Canister - 6 Liter	N/A	NA			Y	Present/Intact		CLEAN-FEE()

*Values in parentheses indicate holding time in days

Project Name: DOW HANGING ROCK
Project Number: 693874.CI.FD

Lab Number: L1851508
Report Date: 12/20/18

GLOSSARY

Acronyms

EDL	- Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).
EMPC	- Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.
EPA	- Environmental Protection Agency.
LCS	- Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
LCSD	- Laboratory Control Sample Duplicate: Refer to LCS.
LFB	- Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.
MDL	- Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
MS	- Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available.
MSD	- Matrix Spike Sample Duplicate: Refer to MS.
NA	- Not Applicable.
NC	- Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.
NDPA/DPA	- N-Nitrosodiphenylamine/Diphenylamine.
NI	- Not Ignitable.
NP	- Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.
RL	- Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.
RPD	- Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.
SRM	- Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.
STLP	- Semi-dynamic Tank Leaching Procedure per EPA Method 1315.
TEF	- Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.
TEQ	- Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.
TIC	- Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

- 1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

- Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.
- Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.
- Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.
- Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.
- Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Report Format: Data Usability Report



Project Name: DOW HANGING ROCK
Project Number: 693874.CI.FD

Lab Number: L1851508
Report Date: 12/20/18

Data Qualifiers

- A** - Spectra identified as "Aldol Condensation Product".
- B** - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).
- C** - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.
- D** - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.
- E** - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.
- G** - The concentration may be biased high due to matrix interferences (i.e. co-elution) with non-target compound(s). The result should be considered estimated.
- H** - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.
- I** - The lower value for the two columns has been reported due to obvious interference.
- M** - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.
- NJ** - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.
- P** - The RPD between the results for the two columns exceeds the method-specified criteria.
- Q** - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedances are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)
- R** - Analytical results are from sample re-analysis.
- RE** - Analytical results are from sample re-extraction.
- S** - Analytical results are from modified screening analysis.
- J** - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).
- ND** - Not detected at the reporting limit (RL) for the sample.

Report Format: Data Usability Report



Project Name: DOW HANGING ROCK
Project Number: 693874.CI.FD

Lab Number: L1851508
Report Date: 12/20/18

REFERENCES

- 48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at its own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.



Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility

EPA 624/624.1: m/p-xylene, o-xylene

EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; **SCM:** Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.

EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; **SCM:** Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; **SCM:** Total Phosphorus, TKN, NO₂, NO₃.

Mansfield Facility

SM 2540D: TSS

EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.

EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.

Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water

EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2:** Nitrate-N, Nitrite-N; **SM4500NO3-F:** Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE,** **EPA 180.1, SM2130B, SM4500CI-D, SM2320B, SM2540C, SM4500H-B**

EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.

Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT, SM9222D.**

Non-Potable Water

SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1:** Ammonia-N, LACHAT 10-107-06-1-B: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2:** Nitrate-N, **SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300:** Chloride, Sulfate, Nitrate.

EPA 624.1: Volatile Halocarbons & Aromatics,

EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs

EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045:** PCB-Oil.

Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water

EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1 Hg.**
EPA 522.

Non-Potable Water

EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.

EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.

EPA 245.1 Hg.

SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.



AIR ANALYSIS

CHAIN OF CUSTODY

320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Jacobs / CH2M

Address:

Phone:

Fax:

Email: Marie.Chillier@Jacobs.com

 These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments:

Project-Specific Target Compound List:

PAGE 1 OF 2

Date Rec'd in Lab: 12/13/18

ALPHA Job #: L1851508

Project Information

Project Name: Dow - Hanging Rock

Project Location: Ironton, OH

Project #: 693874CH.01.RR

Project Manager: Marie Chiller

ALPHA Quote #: 279924

Turn-Around Time

 Standard RUSH (only confirmed if pre-approved)

Date Due:

Time:

Report Information - Data Deliverables

 FAX ADEX

Criteria Checker:

(Default based on Regulatory Criteria Indicated)

Other Formats:

 EMAIL (standard pdf report) Additional Deliverables:

Report to: (if different than Project Manager)

Billing Information

 Same as Client Info

PO #:

Regulatory Requirements/Report Limits

State/Fed

Program

Res / Comm

ANALYSIS

Sample Comments (i.e. PID)

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	COLLECTION				Sample Matrix*	Sampler's Initials	Can Size	ID Can	ID - Flow Controller	TO-15	TO-15 SIM	APH	Sulfuric/Nitroethane HC's	Fixed Gases	Sulfides & Mercaptans by TO-15	
		End Date	Start Time	End Time	Initial Vacuum												
1508-01	S01-B505-1A13-120718	12-7-18	9:33	1739	-30.12	-1.2	AA	B1	6	982	973	X					
-02	S01-B505-1A11-120718	12-7-18	9:27	1743	-30.01	-6.16	AA	B1	6	525	1033	X					
-03	S01-B505-1A10-120718	12-7-18	1:25	1749	-30.12	-5.66	AA	B1	6	766	971	X					
-04	S01-B505-1A12-120718	12-7-18	9:21	1751	-30.01	-6.19	AA	B1	6	253	169	X					
-05	S01-B505-1A06-120718	12-7-18	9:22	1753	-29.48	-8.82	AA	B1	6	1980	625	X					
-06	S01-B505-1A09-120718	12-7-18	9:24	1756	-29.82	-4.86	AA	B1	6	2120	624	X					
-07	S01-B505-FD01-120718	12-7-18	9:38	1811	-30.05	-6.59	AA	B1	6	1515	386	X					
-08	S01-B505-0A02-120718	12-7-18	9:37	1800	-30.01	-5.56	AA	B1	6	2569	135	X					
-09	S01-B505-1A06-120718	12-7-18	9:29	1823	-29.87	-9.11	AA	B1	6	1551	454	X					
-10	S01-B505-1A14-120718	12-7-18	9:35	1839	-29	-9.21	AA	B1	6	899	1168	X					

AA = Ambient Air (Indoor/Outdoor)

SV = Soil Vapor/Landfill Gas/SVE

Other = Please Specify

Container Type

62

X

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

*SAMPLE MATRIX CODES

Relinquished By:
*W.M. Becker*Date/Time:
12-12-18Received By:
*R. Reed*Date/Time:
12/13/18 11:43



AIR ANALYSIS

CHAIN OF CUSTODY

320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Client Information

Client: Jacobs / CH2M

Address:

Phone:

Fax:

Email: Marie.Chiller@Jacobs.com

 These samples have been previously analyzed by Alpha

Other Project Specific Requirements/Comments:

Project-Specific Target Compound List:

PAGE 2 OF 3

Date Rec'd in Lab: 12/13/18

ALPHA Job #: L1851508

Project Information

Project Name: Bow - Hanging Rock

Project Location: Irwin, OH

Project #: 693874CH,01.RR

Project Manager: Marie Chiller

ALPHA Quote #: 279974

Turn-Around Time

 Standard RUSH (only confirmed if pre-approved)

Date Due:

Time:

Report Information - Data Deliverables

 FAX ADEx

Criteria Checker:

(Default based on Regulatory Criteria Indicated)

Other Formats:

 EMAIL (standard pdf report) Additional Deliverables:

Report to: (if different than Project Manager)

Billing Information

 Same as Client Info

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Regulatory Requirements/Report Limits

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ANALYSIS

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ALPHA Lab ID (Lab Use Only)	Sample ID	COLLECTION					Sample Matrix*	Sampler's Initials	Can Size	ID Can	ID - Flow Controller	TO-15	TO-15 SIM	AP4H	Substituted Non-petroleum ACs	Fixed Gases	Sulfides & Mercaptans by TO-15	Sample Comments (i.e. PID)
		End Date	Start Time	End Time	Initial Vacuum	Final Vacuum												
-11	S01-B505-1A10-120718	12-7-18	0925	1745	-29.77	-7.37	AA	B1	6	2126	593	X						
-12	S01-B505-1A07-120718	12-7-18	0920	1749	-30.02	-5.66	AA	B1	6	1706	971	X						

AA = Ambient Air (Indoor/Outdoor)

SV = Soil Vapor/Landfill Gas/SVE

Other = Please Specify

*SAMPLE MATRIX CODES

Container Type

SL

X

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Relinquished By:

W.M. Chiller
FedEx

Date/Time

12-12-18

Received By:

B.S. Rana

Date/Time:

12/13/18 11:43